

Docket No. YOR920030129US1

IN THE CLAIMS:

Please amend the claims as follows:

Please cancel claims 14 and 24-34, without prejudice.

5

1. (Currently Amended) An antireflective hardmask layer for lithography, comprising:
a carbosilane polymer backbone comprising at least one chromophore moiety and
at least one transparent moiety; and

10 a crosslinking component, wherein the crosslinking component comprises a
crosslinking group selected from the group consisting of glycoluril, alcohols, aromatic alcohols,
hydroxybenzyl, phenol, hydroxymethylbenzyl, cycloaliphatic alcohols, aliphatic alcohols,
cyclohexanoyl, propanol, non-cyclic alcohols, fluorocarbon alcohols, vinyl ethers, epoxides and
compositions comprising at least one of the foregoing crosslinking groups.

15

2. (Original) The antireflective hardmask layer of claim 1, wherein the carbosilane
polymer backbone comprises SiO-containing units.

3. (Original) The antireflective hardmask layer of claim 2, wherein the carbosilane
20 polymer backbone comprises more carbosilane than SiO-containing units.

4. (Original) The antireflective hardmask layer of claim 1, further comprising an
additional crosslinking component.

25 5. (Original) The antireflective hardmask layer of claim 1, wherein the carbosilane
polymer backbone comprises unsaturated carbon to carbon bonds.

Docket No. YOR920030129US1

6. (Original) The antireflective hardmask layer of claim 1, wherein the carbosilane polymer backbone comprises saturated carbon to carbon bonds.

7. (Original) The antireflective hardmask layer of claim 1, comprising from about 50 wt.%, on a solids basis, carbosilane polymer backbone.

8. (Original) The antireflective hardmask layer of claim 1, comprising from about 70 wt.% to about 80 wt.%, on a solids basis, carbosilane polymer backbone.

9. (Original) The antireflective hardmask layer of claim 1, wherein each chromophore moiety comprises a moiety selected from the group consisting of phenyl, chrysenes, pyrenes, fluoranthrenes, anthrones, benzophenones, thioxanthenes, anthracenes, anthracene derivatives, 9-anthracene methanol, phenol thiazine, non-aromatic compounds containing unsaturated carbon to carbon double bonds, compounds containing saturated carbon to carbon bonds and compositions comprising at least one of the foregoing moieties.

10. (Original) The antireflective hardmask layer of claim 1, wherein the carbosilane polymer backbone is transparent to one or more wavelengths of radiation.

11. (Original) The antireflective hardmask layer of claim 1, wherein each transparent moiety is transparent to 157 nanometer radiation.

12. (Original) The antireflective hardmask layer of claim 1, wherein a given number of the at least one transparent moiety comprise an organic moiety.

13. (Original) The antireflective hardmask layer of claim 12, wherein a given number of the at least one transparent moiety comprise an organic moiety.

14. (Cancelled).

Docket No. YOR920030129US1

15. (Original) The antireflective hardmask layer of claim 1, comprising from about one wt.% to about 50 wt.%, on a solids basis, crosslinking component.

5 16. (Original) The antireflective hardmask layer of claim 1, comprising from about three wt.% to about 25 wt.%, on a solids basis, crosslinking component.

17. (Original) The antireflective hardmask layer of claim 4, wherein the additional crosslinking component comprises an additional crosslinking group selected from the group consisting of glycoluril, methylated glycoluril, butylated glycoluril, tetramethoxymethyl glycoluril, methylpropyltetramethoxymethyl glycoluril, methylphenyltetramethoxymethyl glycoluril, 2,6-bis(hydroxymethyl)-p-cresol, etherified amino resins, methylated melamine resins, N-methoxymethyl-melamine, butylated melamine resins, N-butoxymethyl-melamine, bis-epoxies, bis-phenols, bisphenol-A and compositions comprising at least one of the foregoing additional crosslinking groups.

10

15

18. (Original) The antireflective hardmask layer of claim 1, further comprising an acid generator.

20 19. (Original) The antireflective hardmask layer of claim 18, wherein the acid generator comprises an acid generating group selected from the group consisting of 2,4,4,6-tetrabromocyclohexadienone, benzoin tosylate, 2-nitrobenzyl tosylate, alkyl esters of organic sulfonic acids and compositions comprising at least one of the foregoing acid generating groups.

25 20. (Original) The antireflective hardmask layer of claim 18, wherein the acid generator comprises a thermal acid generator.

21. (Original) The antireflective hardmask layer of claim 18, comprising from about one wt.% to about 20 wt.%, on a solids basis, acid generator.

30

Docket No. YOR920030129US1

22. (Original) The antireflective hardmask layer of claim 18, comprising from about one wt.% to about 15 wt.%, on a solids basis, acid generator.

23. (Currently Amended) A lithographic structure, comprising:

5 a substrate;

a material layer over the substrate;

an antireflective hardmask layer over the material layer, the antireflective hardmask layer comprising:

10 a carbonsilane polymer backbone comprising at least one chromophore moiety and at least one transparent moiety;

a crosslinking component, wherein the crosslinking component comprises a crosslinking group selected from the group consisting of glycoluril, alcohols, aromatic alcohols, hydroxybenzyl, phenol, hydroxymethylbenzyl, cycloaliphatic alcohols, aliphatic alcohols, cyclohexanovl, propanol, non-cyclic alcohols, fluorocarbon alcohols, vinyl ethers, epoxides and
15 compositions comprising at least one of the foregoing crosslinking groups; and

a radiation-sensitive imaging layer over the antireflective hardmask layer.

24. (Cancelled).

20 25. (Cancelled).

26. (Cancelled).

27. (Cancelled).

25 28. (Cancelled).

Docket No. YOR920030129US1

29. (Cancelled).

30. (Cancelled).

5 31. (Cancelled).

32. (Cancelled).

33. (Cancelled).

10

34. (Cancelled).